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Case Report

A Case Report of a Child with Periorbital Cellulitis Following Human Bite

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Abstract: Human bite wounds may prove to be extremely disastrous due to the lethal pathogenicity of the complex oral flora. Inoculation of these microorganisms underneath the skin surface causes infection of varying intensities. An eight year old boy was admitted to emergency department with a chief complaint of pain and swelling around his eyes and forehead besides a scar due to a human bite over his left eye which already was sutured. This was happened during playing football with his friends. His friend's tooth was crashed to his forehead and broken and left in his forehead, in the clinic they first had taken the tooth off and then washed the wound by normal saline solution and then sutured the wound .On examination, patient was conscious and oriented with stable vital signs. After initial evaluation we ordered a spiral CT-scan without contrast of orbit to investigate the details of problem. The CT-scan showed that both pre orbital spaces were affected by inflammation dominantly the left side. We referred him to a pediatric center to complete the management with diagnosis of periorbital cellulitis .He was not admitted at pediatric center and was discharged with empirical therapy with oral antibiotics and analgesics after removal the sutures of infected wound and washing with normal saline. .primary suturing of human bite wounds regard to high infection risk are not appropriate and it is better to leave for daily washing and then primary delayed suture.
Keywords: Human bite, Wound infection, Periorbital cellulitis.

INTRODUCTION

Human bite injuries can be found in any anatomic location, including the face and head, breasts and genitalia, upper and lower extremities and abdomen and thorax, inflicted as a result of interpersonal violence, assault and under extreme sexual activities [1]. Human bites are frequently overlooked in making a diagnosis in the emergency room [2]. The human saliva contains bacterial loads in the order of 10^8/ml [4]. This fact explains the propensity of the infection that may be caused due to a human bite. We report a case of periorbital cellulitis secondary to human bite.

CASE REPORT

An eight year old boy was admitted to emergency department with a chief complaint of pain and swelling around his eyes and forehead besides a scar due to a human bite over his left eye which already was sutured .History revealed that this was happened at school during playing football with his friends. His friend's tooth was crashed to his forehead and broken and left in his forehead following which he was taken to a local clinic near the school, they first had taken the tooth off and then washed the wound by normal saline solution after that they sutured the wound and then dressed his forehead wound with sterile bandage. He was discharged without any follow up advice or medication prescribed. At 8pm on the same day his parents noticed that his eyes are being swallowed specially around his left eye which the bite scars took place over it.

Immediately they had taken him to our ED. The first visit at emergency ward reveled a 3 cm wound resulting of human bite 1.5 cm above his left eyebrow which was sutured .furthermore he had swelling over his forehead and erythema specially around his left eye and induration and erythema over the bite scar. He suffered from pain and inability to open his eyes due to increasing swelling of his upper face. Pain was sudden in onset, continuous and moderate in intensity, radiating to left side of the face. On examination, patient was conscious and oriented with stable vitals. Gross diffuse facial swelling was noticed involving left periorbital region and left lower eyelid which expanding to his left cheek (Fig. 1). On palpation, inspectory findings were confirmed with local warmness and tenderness. The swelling was not firm and did not have any fluctuation. The sutured wound did not have any obvious purulent discharge (Fig. 2). Eye opening was affected so that the child couldn't open his left eye but he opened his right

eye a bit. The visual acuity of his left eye was measured as light perception and his right eye visual acuity was 7/10 by Snellen chart. The examination of his left pupil was impossible due to difficulty of opening the eye but the right side pupil was reactive to light and normal size. These findings suggested the diagnosis of periorbital space infection secondary to human bite. After initial evaluation we ordered a spiral CT-scan without contrast of orbit to investigate the details of problem. The CT-scan showed that both pre orbital spaces were affected by inflammation dominantly the left side (Fig. 3).

We referred him to a pediatric center to complete the management with diagnosis of periorbital cellulitis secondary to an infected human bite wound. He was not admitted at pediatric center and was discharged with empirical therapy with oral antibiotics and analgesics after removal the sutures of infected wound.

During first follow up visit a day after initiation of oral cefixim surprisingly his sign and symptoms had been started to improve so that the swelling and tenderness had subsided. And 5 days later the visual acuity of his both eyes were normal, and the other ophthalmologic examination including pupil reaction to light, eye movements and fundoscopy were normal too.

Fig. 1: Gross diffuse facial swelling was noticed involving left periorbital region and left lower eyelid which expanding to his left cheek

Fig. 2: The sutured wound did not have any obvious purulent discharge

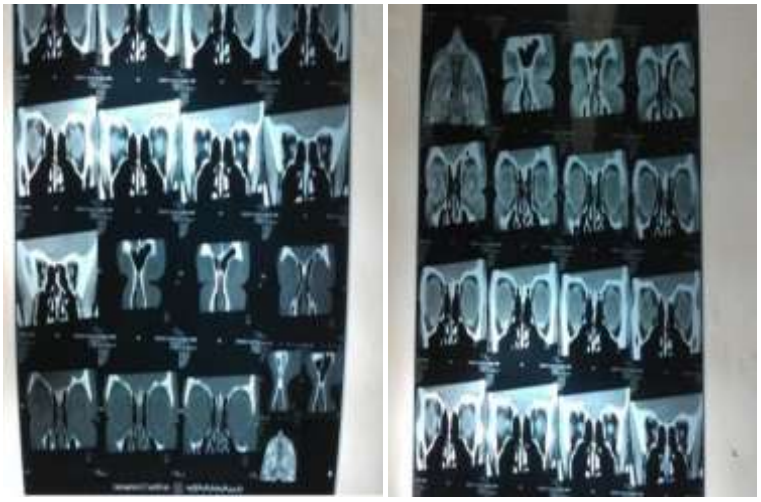

Fig. 3: CT-scan showed that both pre orbital spaces were affected by inflammation dominantly the left side

The CT-scan showed that both pre orbital spaces were affected by inflammation dominantly the left side.

DISCUSSION

Mammalian bites account for almost 1% of emergency room (ER) visits annually in the United State [1]. ***Human bites*** inflicted as a result of interpersonal violence, assault and under extreme sexual activities. It is believed that many cases of human bites do occur in our society but most of them go unnoticed as they are underreported probably due to social embarrassment [2]. So it is important to pay attention to diagnosis and early treatment of this kind of wounds to prevent developing complications.

It is reported that human bites are more common among males, with the peak incidence being between 18 and 78 years of age (median - 28 years) [1]. A study

of 388 patients with human bites had reported that more than half of the patients (50.3%) presented with bites on the hands or fingers, while 23.5% on an extremity and 17.8% on the head or neck. Closed fist injuries accounted for only 7.7% of the bites, with occlusion bites accounting for the rest. Majority of the patients (76.2%) presented to the ER within 12 h of injury. Most of the patients (77.3%) received antibiotics, while 11.1% were admitted to the hospital. Patients who had greater odds of presenting more than 24 h after the bite were black (odds ratio, OR 1.79), Hispanic (OR 2.68) and person with non-occupational bite (OR 3.87) [3]. Patients with bite injuries are often intoxicated that makes difficulty in the process of obtaining a reliable history and conducting a thorough examination, also frequently found to be reluctant to admit to the cause of the injury and provide misleading histories. The rate of infection secondary to human bites is estimated to be about 10 % [4]. This rate of infection will be increase by wound mismanagement.

Human bite wounds present a challenge to any emergency department, given the many issues involved in their management [5]. Human bite injuries may present in one of two forms, the closed fist injury or the occlusive bite injury [6, 7]. Closed fist injuries occur when the fist strikes a tooth with sufficient force to breach the integrity of the skin, commonly occurring over the metacarpophalangeal joint and may result in an extensor tendon injury [8, 9]. Transmission of HIV via a human bite is unlikely but anecdotal reports exist [10].

As mentioned above, the human saliva contains bacterial loads in the order of 10^8/ml [4]. As a result, higher numbers of pathogenic anaerobic organisms are found in human bite wound cultures, among which *Prevotella melaninogenica and intermedia* and *Fusobacterium nucleatum* predominate, almost always in mixed cultures.

The most frequent aerobics are *Streptococcus* and *Staphylococci*. *Eikenella corrodens* appears to have a unique association with human bite wound infections [11, 12]. It has been particularly implicated in clenched fist injuries. In this setting it can act synergistically with viridians streptococci and cause osteomyelitis [13].

CONCLUSION

Human bites laceration in any anatomic location even in head and neck due to high bacterial loads and high infection risk should not be primary closure, irrigation is the mainstay of wound infection protection and treatment.

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